

IN THE SPECIFICATION:

Please amend the specification as follows:

Please substitute the paragraph beginning at page 3, line 9, with the following.

-- A manufacturing process for manufacturing a semiconductor device such as an LSI or a VLSI formed from a micropattern uses a reduction type projection exposure apparatus for printing by reduction projection a circuit pattern drawn on a master onto a substrate coated with a photosensitive agent. An increase in packaging density of semiconductor devices leads to further micropatterning. This requires high-precision alignment, and demands have arisen for suppressing the influence of heat generated by a linear motor on the measurement precision of an interferometer. --

Please substitute the paragraph beginning at page 6, line 2, with the following.

-- From another point of view, in an apparatus having a plurality of objects subjected to cooling temperature adjustment, a plurality of temperature adjustment systems which perform cooling temperature adjustment for the objects conventionally use a common coolant. As described above, coolants such as a fluorine-based inert solution, a gas, an antifreeze, and the like, have different characteristics. Thus, the inventor of the present invention has arrived at an idea that an apparatus having a plurality of objects subjected to cooling temperature adjustment preferably employs a coolant in accordance with the properties of the objects subjected to cooling temperature adjustment, in consideration of the economical and physical efficiencies, and the like. --

Please substitute the paragraph beginning at page 10, line 13, and ending on page 11, line 1, with the following.

-- According to the preferred embodiment of the present invention, a device manufacturing apparatus having a plurality of objects subjected to cooling temperature adjustment employs pure water, a fluorine-based inert solution, a gas, or an antifreeze as a coolant in accordance with the objects subjected to cooling temperature adjustment. The coolant to be employed can be determined in accordance with the properties (e.g., the heating value, the installation location, and the like) of the objects subjected to cooling temperature adjustment in consideration of the economical efficiency, physical efficiency (e.g., the recovery efficiency of heat), the size of the apparatus, and the like. This can provide a small, efficient cooling temperature adjustment device which satisfies the required specifications. --

Please substitute the paragraph beginning at page 11, line 2, with the following.

-- Particularly, an object subjected to cooling temperature adjustment with a high heating value and/or an object subjected to cooling temperature adjustment which desirably does not emit heat to the surrounding atmosphere preferably employs pure water as the coolant. For example, if a device manufacturing apparatus having a driving section such as a linear motor, particularly, an exposure apparatus, incorporates a cooling temperature adjustment device, a cooling temperature adjustment system which performs cooling temperature adjustment for the driving section preferably employs pure water as the coolant. In this case, an increase in cooling efficiency can suppress any degradation in performance (e.g., the alignment precision) of the

exposure apparatus due to heat and can precisely transfer a fine pattern onto a substrate. The increase in cooling efficiency also contributes to an increase in stage velocity, or the like, and further, an increase in processing speed (throughput). Additionally, pure water is excellent in ~~views~~ terms of economy. --

Please substitute the paragraph beginning at page 11, line 23, and ending on page 12, line 2, with the following.

-- Pure water is excellent as the coolant in that the heat capacity is large, the electrical insulating property is high, and ~~that~~ the device manufacturing process and the environment are free from contamination or have no adverse effects. In order to obtain this advantage, the purity of pure water is preferably controlled to $1\Omega \cdot \text{cm}$ or more ($0.1 \mu\text{S}/\text{cm}$ or less). --

Please substitute the paragraph beginning at page 12, line 3, with the following.

-- An object subjected to cooling temperature adjustment with a low heating value preferably employs a coolant other than pure water, such as a fluorine-based inert solution, a gas, or ~~[[an]]~~ antifreeze. To employ pure water as the coolant, the purity of pure water (water quality) needs to be kept at a predetermined level. For this purpose, an impurity removing unit is preferably provided. This, however, increases the size of the cooling device. Under the circumstances, an object subjected to cooling temperature adjustment with a low heating value preferably employs a coolant which requires no impurity removing unit, i.e., a coolant whose properties (performance) can easily be maintained. --

Please substitute the paragraph beginning at page 14, line 16, with the following.

-- It is desirable for the coolant for performing cooling temperature adjustment for a heating member such as a linear motor not only to have a high electrical insulating property and a high corrosion resistance, but also not to contain contaminants in case the coolant leaks. Under the circumstances, the second cooling system preferably employs pure water with a resistivity of $1\text{M}\Omega \cdot \text{cm}$ or more. --

Please substitute the paragraph beginning at page 14, line 25, and ending on page 15, line 10, with the following.

-- An impurity removing unit 4 is provided in a pure water path 6 which includes the second cooling temperature adjustment unit 50. The impurity removing unit 4 comprises all or some of, e.g., a deaeration film, an ion-exchange resin, a reverse osmosis membrane, an activated carbon filter, a membrane filter, a bactericidal lamp, and the like. To remove dissolved oxygen in pure water, a method of providing a tank for storing pure water in the pure water path 6, filling the space in the tank with nitrogen, and removing dissolved oxygen in the pure water or a bubbling method of causing nitrogen to emit from the lower surface of the tank may be used. --

Please substitute the paragraph beginning at page 15, line 11, with the following.

-- By forming the pure water path 6 as a complete circulating system, i.e., a closed system, the size of the second cooling temperature adjusting unit 50 and further, the entire exposure apparatus can be reduced, as compared to a system in which pure water is externally

supplied whenever necessary. This is because a complete circulating system can reduce a burden which the impurity removing unit 4 needs to carry in order to maintain the purity. --

Please substitute the paragraph beginning at page 15, line 20, and ending on page 16, line 5, with the following.

-- The third cooling temperature adjustment system will be described. A portion which is preferably less affected by leakage of the cooling medium or a portion which needs to ensure a very high electrical insulating property preferably employs a fluorine-based inert coolant as the cooling medium. The fluorine-based inert coolant is controlled by the third cooling temperature adjustment unit 60 to have a predetermined temperature and supplied to the lens 15 through a fluorine-based inert coolant path 7. Since the fluorine-based inert coolant is a chemically stable liquid, it does not degrade or perish and requires almost no maintenance. --

Please substitute the paragraph beginning at page 16, line 25, and ending on page 17, line 18, with the following.

-- The manufacturing process of a semiconductor device using the above-mentioned exposure apparatus will be described next. Fig. 3 shows the flow of the whole manufacturing process of the semiconductor device. In step 1 (circuit design), a semiconductor device circuit is designed. In step 2 (mask formation), a mask having the designed circuit pattern is formed. In step 3 (wafer manufacture), a wafer is manufactured by using a material such as silicon. In step 4 (wafer process), called a preprocess, an actual circuit is formed on the wafer by lithography using

the prepared mask and wafer. Step 5 (assembly), called a post-process, is the step of forming a semiconductor chip by using the wafer formed in step 4, and includes an assembly process (dicing and bonding) and a packaging process (chip encapsulation). In step 6 (inspection), the semiconductor device manufactured in step 5 undergoes inspections such as an operation confirmation test and a durability test of the semiconductor device manufactured in step 5. After these steps, the semiconductor device is completed and shipped (step 7). --